



TEST REPORT



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ISO/IEC 17025
Materials Testing Laboratory

TMI Mill# 44116	TMI Lot # 50255	Customer P.O. # 14752	Quantity 2800 ft
Sold to: Swagelok 4922 Pittsburgh Ave. Erie, PA, 16509-6207		Type & Grade 316/316-L Seamless	Size 0.2430"/0.2480" OD 0.0790"/0.0830" ID
Specifications Part# TU4H60 (23-24') Reference Only IPT-35 Rev. 7. (Chem Only: ASTM-A213/A213M Rev. 11a), 110 KSI Min. Tensile, Yield 100 KSI min, ELONG 18% MIN			

Chemical Analysis

HEAT#: 530635

Melt Source / Analysis: SANDVIK-SWEDEN

C	Mn	P	S	Si	Cr	Ni	Mo	Cu
.018	1.642	.019	.001	.368	17.018	11.283	2.065	0.183

Mechanical Properties

Tensile Strength		0.2% Offset Yield Strength		% Elongation	Hardness
136,000	PSI	104,000	PSI	19	* HRC22
135,000	PSI	102,000	PSI	20	* HRC22
134,000	PSI	101,000	PSI	18	* HRC22
137,000	PSI	103,000	PSI	18	* HRC22
136,000	PSI	108,000	PSI	18	* HRC22

Visual	Passed	Dimensional	Passed
Embrittlement	PASSED	Eddy Current	PASSED 10% Notch Level
Profilometer	ID RMS 58	Hydrostatic	PASSED 60,000 PSI
Microstructure	NO CONTINUOUS INTERGRANULAR CARBIDE PRECIPITATION	Micro Examination	NO CARBURIZATION

FLOW TECHNOLOGY LTD
TEST CERTIFICATE
VERIFIED TRUE
COPY OF ORIGINAL

BORE SAMPLES PASSED

APPROVED FOR PRODUCTION
 Jeff Kent
 X DATE/TIME 12-5-13

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Nicholas Ricci, Plant Metallurgist 12/06/2012 Page 1 of 1

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1/4" High Pressure Nipple 4" Long 60K